

# **HYBRID VARIABLE SPEED GENERATOR/UNINTERRUPTIBLE POWER SUPPLY POWER CONVERTER**

## **ABSTRACT OF THE DISCLOSURE**

**[0099]** The invention in the simplest form is an improved hybrid power converter with uninterruptible power supply (UPS) and power quality capabilities as well as an integrated variable speed power source and control method that is used to generate high quality, uninterruptible AC power utilizing fewer batteries and operating at optimum fuel efficiency and with reduced emissions. The variable speed generator control scheme allows for load adaptive speed control of a power source such as an engine and generator. The transformerless hybrid power converter topology and control method provides the necessary output frequency, voltage and/or current waveform regulation, harmonic distortion rejection, and provides for single-phase or unbalanced loading. The transformerless hybrid power converter also provides inline or offline UPS capability, line voltage and/or frequency sag and surge compensation, peak shaving capability, VAR compensation and active harmonic filtering.